REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-30 are pending in the present application. The specification and abstract are amended by the present amendment. No new matter is added.

In the outstanding Office Action, the abstract was objected to; the specification was objected to; Claims 1, 4, 9 and 10 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,389,493 to Barkley et al. (herein "Barkley") in view of U.S. Publication No. 2004/0213197 to Zimmerman et al. (herein "Zimmerman"); Claims 5-7 were rejected under 35 U.S.C. § 103(a) as unpatnetable over Barkley in view of Zimmerman and U.S. Patent No. 5,430,732 to Lee et al. (herein "Lee"); Claims 2, 3 and 8 were indicated as allowable if rewritten in independent form; and Claims 11-30 were allowed.

Applicants acknowledge with appreciation the indication of allowable subject matter.

Applicants acknowledge with appreciation the courtesy of a personal interview between Applicants' representatives and Examiner Park and Supervisory Patent Examiner Nguyen on December 5, 2005. During the interview, differences between the present invention and the applied art, and the rejections noted in the outstanding Office Action, were discussed. The Examiners acknowledged that the combination of Barkley and Zimmerman does not show a "packet checking unit," as recited in Applicants' claims. Arguments presented during the interview are reiterated below.

In response to the objection to the abstract, Applicants have amended the abstract to be 139 words. Accordingly, Applicants respectfully request that the objection to the abstract be withdrawn.

In response to the objection to the specification, Applicants have amended the title to provide descriptive terms which are clearly indicative of the invention to which the claims are directed. Accordingly, Applicants respectfully request that the objection to the specification be withdrawn.

The Official Action rejected Claims 1, 4, 9 and 10 under 35 U.S.C. § 103(a) as unpatentable over Barkley in view of Zimmerman. Applicants respectfully traverse this rejection.

To establish a *prima facie* case of obviousness, M.P.E.P. §2143 requires that three criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the references teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim elements.

Applicant respectfully traverses the outstanding ground of rejection because the noted combination of Barkley and Zimmerman does not disclose or suggest each of the limitations of independent Claims 1 and 9.

Applicants' Claims 1 and 9 recite, *inter alia*, a communication control device including "a ***packet checking unit for checking whether or not upward packets exists in slots of an upward signal and producing packet existence information;*** a traffic estimating unit for detecting the existence of the upward packets... ***according to the packet existence information produced by the packet checking unit*** and estimating a traffic volume of upward packets sent from the child station device in a future time ***according to the existence of the upward packets in the prescribed slots*** corresponding to the slot allocation information of the child station device; and a slot allocation changing unit for changing the slot allocation

information... ***according to the estimation of the traffic volume obtained in the traffic estimating unit.***"

Barkley describes a bus management system for dynamically allocating bandwidth. As shown in Fig. 1, a control module 120 allocates bandwidth to slave cards 116 and stores the bandwidth information in memory 124.[1] The control module 120 may modify the bandwidth allocation according to requests to change bandwidth allocation, the size of queues of stored information to be delivered to slave cards 116, or a preset period of time.[2] As noted in the Official Action, Barkley does not teach or suggest allocating slots according to a traffic volume estimate. Moreover, since Barkley does not teach or suggest a traffic volume estimate it cannot teach or suggest changing the slot allocation information "according to the estimation of the traffic volume obtained in the traffic estimating unit," as recited by Applicants' Claims 1 and 9.

Zimmerman describes a method and apparatus for self-correcting bandwidth according to bandwidth requests. The cited paragraph of Zimmerman in the Official Action describes that a base station estimates data traffic based on bandwidth requests and "an observation of traffic."[3] Zimmerman does not provide any further description as to how the traffic is observed. Thus, Zimmerman does not teach or suggest a packet checking unit that checks whether or not packets exits in slots of an upward signal.

Therefore, the combination of Barkley and Zimmerman does not teach or suggest a communication control device including "a ***packet checking unit for checking whether or not upward packets exists in slots of an upward signal and producing packet existence information***," as recited in independent Claims 1 and 9. Because the combination of Barkley and Zimmerman does not teach or suggest packet existence information, the combination of Barkley and Zimmerman cannot teach or suggest "a traffic estimating unit for detecting the

[1] Barkley at Column 6, lines 13-19.
[2] Barkley at Column 7, lines 28-33.
[3] Zimmerman at ¶ 0142.

existence of the upward packets... ***according to the packet existence information produced by the packet checking unit*** and estimating a traffic volume of upward packets sent from the child station device in a future time ***according to the existence of the upward packets in the prescribed slots*** corresponding to the slot allocation information of the child station device," as recited in independent Claims 1 and 9. Because the combination of Barkley and Zimmerman does not teach or suggest an estimate of traffic volume, the combination of Barkley and Zimmerman cannot teach or suggest "a slot allocation changing unit for changing the slot allocation information... ***according to the estimation of the traffic volume obtained in the traffic estimating unit,***" as recited in independent Claims 1 and 9.

In addition, Applicants traverse the rejection because there is no suggestion or motivation to combine Barkley and Zimmerman. Barkley describes a system for controlling a bus not bandwidth used for communication like Zimmerman. Therefore, there is no suggestion or motivation to combine Barkley with Zimmerman.

Although independent Claim 10 may differ in scope from Claims 1 and 9, Claim 10 specifically recites, *inter alia*, "***estimating a traffic volume*** of upward packets sent from each child station device in a future time ***according to the existence of the upward packets in prescribed slots*** corresponding to the slot allocation information of the child station device; and changing the slot allocation information of the child station devices ***according to the estimation of the traffic volume*** in the child station devices." Thus, it is respectfully submitted that independent Claim 10 patentably defines over Barkley in view of Zimmerman.

Furthermore, Zimmerman teaches away from the communication control device of the present invention. The apparatus of Zimmerman repeatedly states that bandwidth is corrected based on requests from user devices.[4] As disclosed in the specification, one advantage of the present invention is that it does not require a child station to send such

[4] Zimmerman at ¶ 0021-0026, 0048, 0066-0068, and 0087.

information.[5] In this regard, "[a] reference may be said to teach away when a person of ordinary skill in the art, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley,* 31 USPQ2d 1130, 1131 (Fed. Cir. 1994). To this end, "disclosures in the references that diverge from and teach away from the invention cannot be disregarded", Phillips Petroleum Company v. U.S. Steel Corp., 9 USPQ2d 1461 (Fed. Cir. 1989).

Applicants respectfully submit the Official Action has not provided a *prima facie* case of obviousness with regard to Claims 1, 9 and 10 and Claims 4-7 depending therefrom. Accordingly, Applicant respectfully requests that the rejection of Claims 1, 9 and 10 and Claims 4-7 depending therefrom under 35 U.S.C. § 103(a) be withdrawn.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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[5] Specification at page 70, lines 14-28.